

ABSTRACT

A shared mesh protection scheme defines an associated protection path when a working connection is established. During the protection path definition, the corresponding protection path information is sent down to a switch card of network elements making up the protection path. Upon detection of the failure, the network elements using an overhead byte message will inform the routing source network element of the connection of the failure in the working path. The overhead bytes used are interrupt driven bytes located in the line and path overhead of network traffic. The routing source node of the connection will then send the corresponding overhead byte messages down the protection path to provide for protection path establishment according to the preloaded data located at the switch card. It should be noted that each connection can have a source and termination element which relates to the source from where the corresponding connection was set-up rather than the direction of the payload transmission. Therefore, once the failure has occurred the source elements will send messages using overhead bytes to the corresponding network elements along the protection path. Accordingly, routing tables located at the switch card of the network elements, set-up when the working path connections were initially established, determine this dynamically allocated protection path environment.